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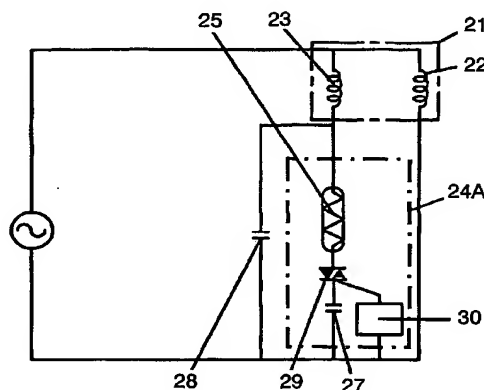
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- (74) Agents: **IWAHASHI, Fumio** et al.; c/o Matsushita Electric Industrial Co., Ltd., 1006, Oaza Kadoma, Kadoma-shi, Osaka, 5718501 (JP).
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- Published:
— with international search report
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: SYNCHRONOUS INDUCTION MOTOR AND ELECTRIC HERMETIC COMPRESSOR USING THE SAME



(57) Abstract: A synchronous induction motor has a stator having a main winding and an auxiliary winding; a rotor having a yoke, a permanent magnet embedded in the yoke and a secondary conductor provided in the vicinity of periphery of the yoke; and a starter. The starter has a starting capacitor connected in series with the auxiliary winding of the synchronous induction motor, and a switching unit to open/ close a circuit from the starting capacitor to the auxiliary winding. The switching unit closes the circuit from the starting capacitor to the auxiliary winding when the synchronous induction motor is at rest, and opens the circuit after the synchronous induction motor is started. The synchronous induction motor is highly efficient and easy to re-start with low power consumption. The electric hermetic compressor equipped with the synchronous induction motor can perform with the similar effects.

WO 2005/006520 A1

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference P00033381-P0	FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. PCT/JP2004/005541	International filing date (day/month/year) 19/04/2004	(Earliest) Priority Date (day/month/year) 09/07/2003
Applicant MATSUSHITA ELECTRIC INDUSTRIAL CO., LTD.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 4 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☐ **Certain claims were found unsearchable** (See Box II).

3. ☐ **Unity of invention is lacking** (see Box III).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regards to the **drawings**,

- a. the figure of the **drawings** to be published with the abstract is Figure No. 3

☒ as suggested by the applicant.

☐ as selected by this Authority; because the applicant failed to suggest a figure.

☐ as selected by this Authority, because this figure better characterizes the invention.

- b. ☐ none of the figures is to be published with the abstract.

INTERNATIONAL SEARCH REPORT

International Application No
PCT/JP2004/005541

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 H02K21/46 H02K1/27 F04B39/02

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H02K F04B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 1 246 348 A (SANYO ELECTRIC CO) 2 October 2002 (2002-10-02) paragraphs '0052!, '0053!; figure 3 paragraphs '0053!, '0070! paragraphs '0072!, '0071! paragraph '0162!; figure 54	1,9
X	paragraphs '0140!, '0142!, '0166!; figure 56	2-8, 10-16
Y	----- US 4 628 443 A (HOLLENBECK ROBERT K ET AL) 9 December 1986 (1986-12-09) column 5, lines 8-25; figure 3	2,10
Y	----- US 3 564 273 A (COCKRELL WILLIAM D) 16 February 1971 (1971-02-16) column 6, lines 22-41; figure 3a column 11, lines 62-68 column 12, lines 4-8 ----- -/-	1-16

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

A document defining the general state of the art which is not considered to be of particular relevance

E earlier document but published on or after the international filing date

L document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

O document referring to an oral disclosure, use, exhibition or other means

P document published prior to the international filing date but later than the priority date claimed

T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

* & * document member of the same patent family

Date of the actual completion of the international search

26 August 2004

Date of mailing of the international search report

06/09/2004

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INTERNATIONAL SEARCH REPORT

International Application No
PCT/JP2004/005541

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	EP 1 227 568 A (SANYO ELECTRIC CO) 31 July 2002 (2002-07-31) paragraphs '0017! - '0019!, '0024!, '0042! - '0047!; figures 1,9,10 -----	1-16

INTERNATIONAL SEARCH REPORT

Information on patent family members

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